herpetic neuralgia (n=5), severe pain (n=3), scarring (n=1), and motor weakness (n=1); 2 patients required hospitalization and 3 patients developed disseminated zoster.

Conclusions: Our limited retrospective analysis suggests a significant reduction in rates of post auto-HCT rates of VZV infection with extended 12month antiviral prophylaxis. VZV infection is a significant complication post auto-HCT, and extended prophylaxis appears to be safe and effective in this setting.

154

High Dose Melphalan and Autologous Stem Cell Transplantation for Systemic AL Amyloidosis – Single Institute Analysis of 35 Cases–

Nobuhiro Tsukada, Kanji Miyazaki, Yu Abe, Rieko Sekine, Yasunori Nakagawa, Kenshi Suzuki. Division of Hematology, Japanese Red Cross Medical Center, Tokyo, Japan

We report 35 patients who received high dose melphalan and autologous stem cell transplantation for systemic AL amyloidosis. Between Sep. 2006 and Jul. 2012, 35 patients with AL amyloidosis were transplanted at Japanese Red Cross Medical Center. Characteristics of patients were shown as follows: median age; 54 (range 39-70), M/F=15/20, major organ involvement; heart 13, kidney 19, others 3 (liver 1, trachea 1, peripheral nerve 1), median melphalan dose; 128 (range 50-200) mg/m^2, median infused CD34+ cells; 2.67 (range 1.17-11.26) x 10^6/kg. Out of 35 patients, 28 are alive after median follow up of 18.7 (range 2-68) months and two and four years estimated overall survival were 84.6% and 66.6%, respectively. Four patients died of heart failure and other three patients died of either gastrointestinal bleeding, bacteremia, or malignancy. Four year estimated survival of patients with cardiac involvement is 46.2% and is significantly lower as compared with that with others (69.2%). Serum albumin increased (average 21%) in patients survived more than 12 months after ASCT. Serum free light chain (FLC) was measured before and after ASCT in 7 patients, and of those, FLC rapidly decreased after ASCT in 5 patients. Patients without cardiac involvement showed satisfactory survival with improvement of clinical symptom and serum albumin. Careful patient selection and experienced management are important especially for patients with cardiac involvement. Serum FLC may be useful for evaluating effectiveness of ASCT and also for early detection of relapse.

155

Results of a Phase 2 Clinical Trial Testing the Efficacy of Plerixafor in Combination with Chemotherapy in the Mobilization of Autologous Blood Hematopoietic Progenitor Cells

Edmund K. Waller [1], Heather Renfroe Johnson [2], Neera Jagirdar [2], Cynthia Gaylor [3], Carol Lipscomb [2], Christopher Flowers [2], Jonathan Kaufman [2], H. Jean Khoury [2], Amelia Langston [2], MaryJo Lechowicz [2], Sagar Lonial [2], Ajay Nooka [2], Rajni Sinha [2], R. Donald Harvey [2]. [1] Bone Marrow and Stem Cell Transplant Program, Emory University, Atlanta, GA; [2] Emory University Winship Cancer Institute, Atlanta, GA; [3] Emory University Hospital, Atlanta, GA

Background: The use of plerixafor for mobilization following chemotherapy has not been extensively studied. We tested the hypothesis that adding plerixafor to G-CSF after chemotherapy would increase the proportion of patients mobilizing the target number of hematopoietic progenitor cells in one day to 75% from a historical value of 50%.

Methods: Multiple myeloma (MM) or lymphoma patients for whom autologous stem cell transplantation was intended were eligible. Patients were mobilized with chemotherapy consisting of either cyclophosphamide (N=16), DCEP (N=1), R-ICE (N=10), CHOP (N=2) or R-HyperCVAD (N=5) with daily administration of G-CSF at a dose of 10 mcg/kg/day starting one day after the completion of chemotherapy. The per-protocol plan was subcutaneous injection of 240 mcg/kg plerixafor on the first day on which the neutrophil count was > 1500 cells/uL followed by apheresis the next day. G-CSF, plerixafor and apheresis were repeated daily until 5 (lymphoma) or 10 x 10E6 CD34+ cells/kg (myeloma) were collected.

Results: 17 MM and 28 lymphoma patients with a median age of 57 (range 33-73) were enrolled. 33/45 subjects (76%) collected the target number of CD34+ cells in one day. 12 subjects (7 MM and 5 lymphoma) with a median CD34+ count of 201 cells/uL began apheresis without plerixafor on the first day of monitoring and collected a median of 19 x 10E6 CD34+ cells/kg in one day. The remaining 33 patients (10 MM and 23 lymphoma) received plerixafor with median numbers of 30 CD34+ cells/uL, and 4100 neutrophils/uL that increased to 95 CD34+ cells/uL and 24,799 neutrophils/uL the next day. Plerixafor-treated subjects collected a median of 7.8 x 10E6 CD34+ cells/kg; 22 (66%) collected the target number in one day, while 6 (18%), 3 (9%), and 2 (6%) of the plerixafor-treated subjects required 2, 3, or 4 days of apheresis, respectively. Plerixafor was well tolerated, with 29 total AE, and no SAE recorded during mobilization and/or apheresis. Seven grade 3/4 AE were seen, including thrombocytopenia (4), fatigue (1), anemia (1) and hypokalemia (1). 44/45 enrolled subjects underwent high-dose chemotherapy and re-infusion of CD34+ cells. Plerixafor-treated and non-plerixafor treated transplant recipients promptly engrafted with neutrophil and platelets at median of 12 and 16 days, respectively, with stable hematopoiesis noted at 12 months.

Conclusions: Plerixafor administration after chemotherapy for ASC mobilization is feasible and well tolerated. A greater percentage (76%) of enrolled subjects collected more than the target number of cells in one day of apheresis compared with a historical cohort of patients mobilized with G-CSF after chemotherapy (54%; $P < 0.03$). Daily monitoring of blood counts after chemotherapy is needed to appropriately schedule plerixafor administration. One-fourth of chemotherapy-treated patients mobilized an adequate number of CD34+ in one day without plerixafor.

156

Impact of Bone Marrow Neuropathy on the Outcome of Autologous Stem Cell Transplantation (ASCT) for Lymphoma

Basem M. William [1], Nermin Kady [2], Anamarija M. Perry [3], Kimberly Klinetobe [4], Robert Gregory Bociek [4], Philip J. Bierman [4], Julie M. Vose [4], James O. Armitage [4], Dennis Weisenburger [5], Julia V. Busik [2]. [1] University Hospitals Case Medical Center, Cleveland, OH; [2] Michigan State University, East Lansing, MI; [3] University of Manitoba, Winnipeg, Canada; [4] University of Nebraska Medical Center, Omaha, NE; [5] City of Hope National Medical Center, Duarte, CA

Bone marrow is a highly innervated tissue with nerve fibers terminating in association with stromal cells. Bone marrow neuropathy has been associated with abnormal hematopoietic stem cell (HSC) trafficking and activity in animal models of diabetes. There is also evidence that granulocyte colony-stimulating factor (G-CSF) mediates its mobilizing effect on HSC through modulation of norepinephrine release from adrenergic neurons. Therefore, we hypothesized that pre-